

TYPE 2 BAR

STEEL SCHEDULE						
MARK	SIZE	QUAN	TYPE	R	S	TOTAL LENGTH
A	5		STR	---	---	5'-9"
B	4		STR	---	---	
C	5		2	2'-0"	1'-0"	3'-0"
D	4		STR	---	---	4'-9"
L	4		2	2'-6"	9"	3'-3"
L1	4		STR	---	---	4'-9"
#4 BARS, TOTAL LENGTH						
#5 BARS, TOTAL LENGTH						

ESTIMATED QUANTITIES	
CONCRETE (0.30 CU. YDS./LIN.FT.)	_____ CU. YDS.
STEEL #4 (20.6 FT./LIN. FT.)	_____ FT.
STEEL #5 (10.3 FT./LIN. FT.)	_____ FT.
STEEL (61.5 FT./CORNER)	_____ FT.

\* CONCRETE SHALL MEET PA 313 OR 561 SPECIFICATION REQUIREMENTS.  
 \* MINIMUM SPICE LENGTH FOR ALL #4 BARS IS 16".  
 \* MINIMUM SPICE LENGTH FOR ALL #5 BARS IS 17".  
 \* STEEL QUANTITY DOES NOT INCLUDE SPICE LENGTHS.  
 \* SUBSTITUTION OF GRADE 60 BARS IS PERMITTED.

TOTAL LENGTH OF WALL\_\_\_\_\_FT.

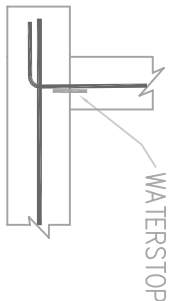
- NOTES:
1. FOR FROST PROTECTION, A 2-FOOT BACKFILL IS RECOMMENDED
  2. DIMENSIONS ARE TO THE REINFORCING BAR SURFACE.

C.J. = CONSTRUCTION JOINT

LIQUID-TIGHT JOINT  YES  NO

## LIQUID-TIGHT JOINT OPTIONS

- 1) NON-METALIC WATERSTOP (PVC)
- 2) HYDROPHILIC WATERSTOP



## CONSTRUCTION JOINT OPTIONS

1. IF SLAB AND WALL ARE POURED SEPARATELY, THE SLAB SURFACE MUST BE THOROUGHLY CLEANED WITH WATER AND A WIRE BRUSH. THE SURFACE OF THE JOINT SHALL BE KEPT MOIST FOR AT LEAST 1 HOUR PRIOR TO PLACEMENT OF NEW CONCRETE.

2. THE SLAB AND WALL MAY BE POURED AT THE SAME TIME ELIMINATING THE NEED FOR A CONSTRUCTION JOINT.

5-FOOT WALL CORNER DETAILS	SEE PA-026B
SLAB CORNER DETAILS	SEE PA-023
RESTRAINING SLAB OPTIONS	SEE PA-024

GENERAL DESIGN NOTES:

- DRAINAGE SHALL BE AWAY FROM THE WALL.
- THE MINIMUM TOP WIDTH OF THE BACKFILL AGAINST THE WALL SHALL BE EQUAL TO OR GREATER THAN THE BACKFILL HEIGHT.
- MAXIMUM FOOTING CONTACT PRESSURE IS 850 psf/ft.

## DESIGN STRENGTHS: WORKING STRESS DESIGN

CONCRETE  $f_c = 4,000$  psi STEEL  $f_s = 20,000$  psi (40 GRADE)

WALL DESIGN LOADING: 313 STANDARD – LATERAL EARTH PRESSURE VALUES,

- MANURE LOAD INSIDE = 65 psf/ft.
- SOIL BACKFILL LOAD OUTSIDE = 60 psf/ft.
- 120 psf HORIZONTAL SURCHARGE OR A 2.5:1 SLOPING BACKFILL IS ALLOWED.
- SOIL BACKFILL DENSITY = 110 pcf.
- WATER TABLE MUST BE BELOW THE FOOTING ELEVATION

## WALL RESTRAINT REQUIREMENTS:

- 5" THICK SLAB, SAFETY FACTOR AGAINST SLIDING 1.5 MIN

BACKFILL HEIGHT (OUTSIDE LOAD)	SLAB LENGTH NO INSIDE LOAD	SLAB LENGTH FULL INSIDE LOAD
5 FEET	53 FEET	NO SLAB
4 FEET	35 FEET	NO SLAB
3 FEET	18 FEET	NO SLAB
2 FEET	5 FEET	NO SLAB
1 FOOT	NO SLAB	2 FEET **
0 FEET	NO SLAB	2 FEET **

\*\*MINIMUM SLAB LENGTH OF 2 FEET REQUIRED AND MUST BE TIED INTO THE WALL FOOTING.

SLAB POURED WITH WALL FOOTING:

#3 BARS @ 18" SPACING (MINIMUM REINFORCEMENT)

SLAB NOT POURED WITH WALL FOOTING:

#3 DOWEL BARS - 3'-0" LENGTH @ 9'-0" SPACING

THIS STANDARDIZED DESIGN MUST BE ADAPTED TO THE SPECIFIC SITE. IT WAS DEVELOPED IN COOPERATION WITH THE WISCONSIN DEPARTMENT OF AGRICULTURE, TRADE AND CONSUMER PROTECTION. THE DESIGN FOLDER IS FILED AT THE NRCS STATE OFFICE, 8030 EXCELSIOR DRIVE, MADISON, WI. 53717-2906